

# Design, Synthesis and Bioevaluation of some Novel Bioactive Ingredients

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**Abstract**—Heterocyclic compounds have attracted significant interest due to their useful biological and pharmaceutical properties. More than 90% of new drugs contain heterocycle and their interface between chemistry and biology. Almost unlimited combinations of fused heterocyclic structure can be designed, which may be used for versatile and productive transformation with the most diverse physical, chemical and biological properties. To design and synthesize proteranols, coumarins, chalcones, pyrazoles and other bioactive compounds. Starting from substituted acetophenones, various proteranol derivatives will be synthesized. Substituted phenols will be treated with  $\beta$ -Ketoester according to Pechmann condensation to get substituted 2H-1-benzopyran-2-ones. 2-propan-1-ones (Chalcones) are very important precursors for the synthesis of various bioactive ingredients. Synthesis of pyrazoles, a six membered heterocyclic and its new analogs will be carried out from chalcones from starting materials using different reaction conditions. Synthesized compounds will be purified by using crystallization and extraction purification techniques. The synthesized compounds will be characterized by spectroscopic techniques (<sup>1</sup>HNMR and IR) and other physical and analytical data. Biological activity of synthesized compound will be carried out. Herbicidal activity will be done by method at different concentrations. Compounds will also be screened for antimicrobial activity against phytopathogens.

**Keywords:** Proteranols, coumarins, chalcones, pyrazoles and herbicidal, antimicrobial activity.